Boeing Analysis of Test Delays

- A reduction in TM range WILL impact test efficiency.
- Delays in aircraft certification and aircraft modifications due to reduced flight ranges could cost Boeing programs, customers, contractors, and the national economy -- potentially billions of dollars.
- Additional losses occur when one considers the loss of competitive advantage due to delays.
- Immediate costs for the 787 program can be over $175,000/day for each additional day the test aircraft is in flight – costs increase with size of the test.
- FAA/DoD certification and delivery delays also cost the US economy in lost revenue, investor confidence and future US aerospace business.
- Reduced usable flight areas impacts safety if unforeseen interference causes signal/communications loss.

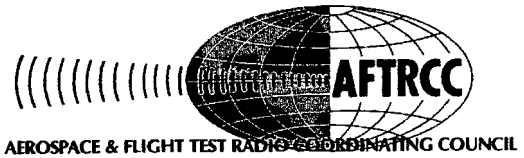
L-3 Cost Impacts

- L-3 flight testing costs range from $48,000 per hour to over $60,000 per hour.
- Delivery delays cost in excess of $100,000 per day in penalties, and can impact vital Federal programs and missions.
- Reduction in telemetry range limits flexibility in scheduling, e.g. Greenville, TX area already heavily impacted by air traffic restrictions due to DFW.

Learjet Cost Impacts

- A "medium" test program at Learjet costs $70,000 for each day in a certification flight test phase (salaries and other expenses)
- A one month delay in delivery of a certified aircraft costs $2.1 million (not counting any contractual delivery penalties)
- A 30% reduction in TM range WILL impact test efficiency and safety by
  - reducing the time available during each flight to complete test points (turn-arounds add no value)
  - increasing the likelihood of interference at test range boundaries
  - increasing flight crew workload to fit a test profile into a smaller area

Impacts on Lockheed Martin



- Lockheed Martin performs flight testing at various facilities including government ranges with manned and unmanned assets.
- Flight telemetry is integral to the testing of new aircraft and to aerospace companies being able to accomplish their mission.
- Pilot safety: Interference free telemetry data is essential to ensuring pilot safety. Flight telemetry provides the only real-time link between the test pilots and engineers providing a layer of safety during flight testing that cannot be substituted by other means.
- Cost: Flight testing for fighter jets, e.g. F-16, can range from $30K to $85K per flight hour – retesting to compensate for non-valid telemetry data due to interference will quickly lead to significant cost and program delays.
- Significant cost and schedule impacts will be experienced due to infringement and further limited use of the S-band.